

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

What is claimed is:

1. (Original) A method for promoting homologous recombination, the method comprising providing a nucleosomal polynucleotide comprising histones and contacting, under conditions that support homologous recombination, the polynucleotide with a target nucleic acid sequence, wherein the target nucleic acid comprises a nucleotide sequence homologous to the nucleosomal polynucleotide.
2. (Original) The method of claim 1, wherein the conditions that support homologous recombination include a recombinase.
3. (Original) The method of claim 2, wherein the recombinase comprises Rad51 associated activity.
4. (Original) The method of claim 2, wherein the recombinase comprises Rad54 associated activity.
5. (Original) The method of claim 2, wherein the recombinase is exogenously produced.
6. (Original) The method of claim 2, wherein the recombinase is endogenously produced.
7. (Original) The method of claim 2, wherein the recombinase is a recombinosome.
8. (Original) The method of claim 1, wherein the contacting is in vitro.
9. (Original) The method of claim 1, wherein the contacting is in vivo.

10. (Original) The method of claim 1, wherein the target nucleic acid sequence is an exogenous sequence.
11. (Original) The method of claim 1, wherein the target nucleic acid sequence is an endogenous sequence.
12. (Original) The method of claim 11, wherein the endogenous sequence is a chromosomal sequence.
13. (Original) The method of claim 1, wherein the target nucleic acid sequence is coding sequence.
14. (Original) The method of claim 1, wherein the target nucleic acid sequence is non-coding sequence.
15. (Original) The method of claim 14, wherein the non-coding sequence is a promoter, enhancers, silencer, origin of replication or splicing signal sequence.
16. (Original) The method of claim 1, wherein the histones are core histones.
17. (Original) The method of claim 1, wherein the nucleosomal polynucleotide is a plasmid.
18. (Original) The method of claim 1, wherein the nucleosomal polynucleotide comprises a nucleic acid sequence that corrects a genetic mutation associated with a disease allele.
19. (Original) The method of claim 1, wherein the nucleosomal polynucleotide comprises a nucleic acid sequence that generates a genetic mutation in a targeted sequence.

20. (Currently amended) The method of claim[[s]] 18 [[or 19]], wherein the genetic mutation is selected from the group consisting of base substitutions, additions, and deletions, or any combination thereof.

21. (Original) The method of claim 19, wherein the genetic mutation alters the expression of one or more genes in a targeted nucleic acid sequence.

22. (Original) A method of ameliorating disease caused by a disease allele, the method comprising:

a) providing a nucleosomal polynucleotide comprising histones and a nucleic acid sequence that corrects a genetic mutation associated with a disease allele; and

b) contacting, under conditions that support homologous recombination, the polynucleotide of a) with a target nucleic acid sequence associated with the disease allele, wherein the target nucleic acid comprises a nucleotide sequence homologous to the nucleosomal polynucleotide.

23. (Original) The method of claim 22, wherein the contacting is in vivo.

24. (Original) The method of claim 22, wherein the conditions that support homologous recombination include a recombinase.

25. (Original) The method of claim 24, wherein the recombinase comprises Rad51 and Rad54 associated activity.

26. (Original) The method of claim 24, wherein the recombinase is endogenously produced.

27. (Original) The method of claim 22, wherein the contacting is in vivo.

28. (Original) The method of claim 22, wherein the target nucleic acid sequence is an endogenous sequence.

29. (Original) The method of claim 28, wherein the endogenous sequence is a chromosomal sequence.

30. (Original) A method for promoting homologous strand pairing, the method comprising providing a nucleosomal polynucleotide comprising core histones and contacting, under conditions that support homologous strand pairing, the polynucleotide with a target nucleic acid sequence comprising a sequence homologous to the polynucleotide.

31. (New) The method of claim 19, wherein the genetic mutation is selected from the group consisting of base substitutions, additions, and deletions, or any combination thereof.